


Regional Adaptation Snapshot Gippsland



The Gippsland region is in Victoria's south-east, reaching from Port Phillip Island and Warragul through the Latrobe Valley and beyond, to East Gippsland and the New South Wales border. It covers one fifth of the state's area with the largest proportion of crown land.

What are the regional adaptation snapshots?

In 2017 the Victorian Government committed another \$9.3 million over three years to support regional solutions through the *Supporting our Regions to Adapt* program. To ensure this funding addresses the most critical needs, officers from the Department of Environment, Land, Water and Planning (DELWP) examined regional impacts of climate change and existing adaptation projects and strategies. Officers spoke to community members, businesses, researchers and government bodies in each region and assessed priorities for communities based on the impacts they're facing as well as their needs and values.

In early 2018, DELWP completed climate change gap analyses in six regions across the state. This report presents a high-level summary of the analysis in Gippsland. It provides a snapshot of impacts, actions, gaps and priorities in the region.

Climate change impacts are already being felt in Victoria—and successful adaptation requires solutions that are identified, owned and driven locally.

Within Victoria, communities, industry and local government are already leading the way.



State of adaptation in Gippsland 2018

In late 2017, DELWP Community and Partnership Officers undertook a review of regional climate change adaptation projects and sought stakeholder and community views on adaptation needs. We commissioned a survey, which had over 350 responses, including face-to-face conversations in Paynesville, Warragul, Traralgon, Cape Paterson and Sale. The survey provided an indication of the priorities from a mix of regional stakeholders and a cross section of the general public across the region. It showed there is a high level of concern about climate change impacts in the region and concern that the things people value the most about Gippsland are also most at risk.

There are over 120 climate change adaptation projects in Gippsland. The majority are led by government—about half of them are local council initiatives. Two-thirds of the projects are strategic; for example, adaptation action plans or emergency management strategies that address several climate hazards.

What we heard - regional priorities

During the consultation, people identified many projects that could help Gippsland adapt to climate change. Some of the key priorities include:

- » developing a regional framework that maps, prioritises, coordinates and monitors climate change adaptation planning and action from all actors across the region
- » developing a strategic approach to ensure a climate change lens is applied to rural land use planning
- » improving identification of assets at risk and developing adaptation strategies for councils and agencies to enable strategic planning
- » improving engagement both between and within organisations on climate change adaptation and the potential impacts of climate change on organisational activities
- » building awareness of local adaptation activities and translating broad climate risks into examples of local impacts and how individuals, communities, businesses and organisations can take action
- » developing practical advice and guidance on how to embed climate adaptation into decision making
- » developing tailored communications for the community to build awareness of the concepts of adaptation and mitigation within the region
- » improving risk management for transport access and connectivity, subject to the impacts of climate change across Gippsland
- » improving engagement with the community on climate change based on what the community values rather than broad generic risks

Project spotlight: Future Homes Program

Future homes program ran a series of ten free community sustainability workshops and tour days, created in partnership between Bass Coast Council and the Bass Coast Landcare Network.

The program ran between November and April, with tours showcasing exceptional homes, gardens, farms and communities using energy and water efficiently, reducing waste and living sustainably. In workshops, people learnt how to save money by reducing energy and water usage at home, turn household waste into compost for their garden; prepare for sea level rise, heat waves and increased frequency of bushfires; and develop emergency response action plans and share information with others.

Project spotlight: Agricultural Resilience

The Agricultural Resilience and Shared Climate Change Opportunities project aimed to facilitate adaptation strategies for food producers in the area. Coordinated by South Gippsland and Bass Coast Shires, the project created a network of local agricultural businesses that actively supported climate adaptation practices.

It used a range of communication tools: a database of interested farmers, a climate change adaptation information centre, the Sustainability Gippsland and Southern Gippsland Food Map websites, and the publication of information on social media as well as email newsletters, newspaper articles and libraries. It also involved a seminar series, a program of farm visits, a mentor network and detailed case studies from best practice farming businesses and local small food producers.

Climate Change Adaptation in Victoria

To find out more about adaptation in Victoria

 Victoria's Climate Change Adaptation Plan 2017-2020

Values and perceptions

People in Gippsland are worried about climate change. According to Sustainability Victoria's research in early 2017, about seven out of ten say they're concerned, and that climate change requires immediate and urgent action. The level of concern is a little lower than the state average, at nearly eight in ten.

These findings were also confirmed through the survey we conducted. Our survey also found that the things people value and consider most at risk from climate change are the enjoyment of forests and access to waterways, beaches and fresh local produce. Of next concern were financial security, jobs, affordable living and safety and security.

Worsening bushfire risk is foremost among the climate threats to the region. Most people consider themselves well informed, but they don't think the community is prepared. There's a similar perception among organisations in the region. Organisations also consider that there is a need for a consistent regional approach to climate change adaptation and preparedness. Only a third of respondents to the survey were aware of local initiatives to respond or adapt to climate change.

Trends across Gippsland Key demographic statistics



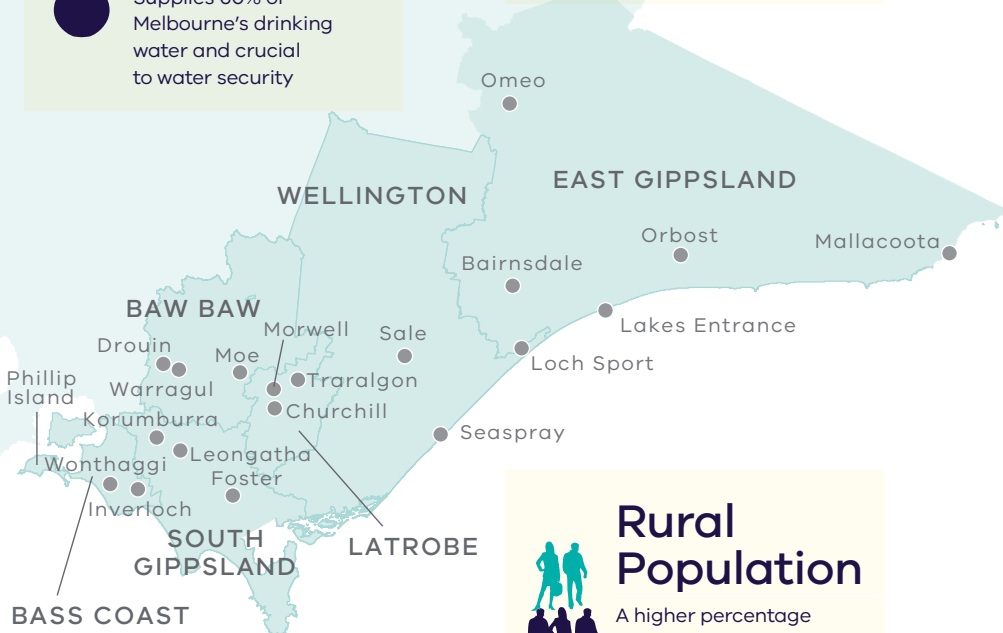
Water

Supplies 60% of Melbourne's drinking water and crucial to water security



270,000

The approximate number of people in the region



Health

A higher level of vulnerable communities than the state average



Rural Population

A higher percentage aged over 65 than state average and two-fifths of residents living in towns of less than 500 people



\$15.4b

Gross regional product, the highest of all the regional areas in 2015

Gippsland has been getting warmer and drier

In the future we can expect



Temperatures to continue to increase year round



Warmer and more acidic oceans



Harsher fire weather and longer fire seasons



More frequent and more intense downpours



More hot days and warm spells and fewer frosts



Increased frequency and height of extreme sea level events




Rising sea level



Less rainfall in autumn, winter and spring

Climate change sector impacts in Gippsland

| | BUILT ENVIRONMENT  | HEALTH AND HUMAN SERVICES  | PRIMARY PRODUCTION  |
|---|---|---|--|
| KEY CLIMATE IMPACTS AND RISK FACTORS | <ul style="list-style-type: none"> » Increasing sea level, storm surges and flooding » Increasing hot days, heat waves and fire weather » Infrastructure assets not climate resilient » Many towns susceptible to increased climate impacts, situated both on the coast and the urban-bush interface | <ul style="list-style-type: none"> » Increasing heat waves, solar radiation and fire weather » Increasing flooding » Dispersed population isolated from services » Relatively high rates of mental health issues » Contraction of emissions intensive industry | <ul style="list-style-type: none"> » Decreasing rainfall and soil moisture » Increasing temperature, hot days and fire weather » High vulnerability to effects of reduced soil moisture » Extreme heat, fire and flood events |
| POTENTIAL IMPACTS | <ul style="list-style-type: none"> » Increased flood damage » Increased maintenance costs » Increased disruption to services » Increased threats to tourism infrastructure » Loss of assets | <ul style="list-style-type: none"> » More stress on health and emergency services » More heat-related deaths, particularly among the elderly and disadvantaged » Cumulative mental health stressors, exacerbated by multiple extreme events | <ul style="list-style-type: none"> » Reduced water security » Changed distribution of pests and diseases » Farm business affected by bushfire and flooding » Changes in pasture growth » Reduced log supply for forestry industry |
| | NATURAL ENVIRONMENT  | TRANSPORT  | WATER  |
| KEY CLIMATE IMPACTS AND RISK FACTORS | <ul style="list-style-type: none"> » Decreasing rainfall » Increasing hot days and fire weather » Increasing sea level, inundation, erosion and ocean acidification » High bushfire vulnerability » Prevalence of soft shorelines and dunes | <ul style="list-style-type: none"> » Increasing sea level, storm surges and flooding » Increasing hot days, heatwaves, fire weather » Limited public transport, especially in the region's east » The largest unsealed road network in the state | <ul style="list-style-type: none"> » Reducing rainfall and streamflow » Increasing evapotranspiration » Increasing flooding » Increasing frequency of drought » Critical water infrastructure susceptible to extreme weather, bushfire, erosion and algal bloom |
| POTENTIAL IMPACTS | <ul style="list-style-type: none"> » Amplification of existing threats to flora and fauna » Coastal erosion and accretion of sand in waterways and bays » Changing dynamics of invasive species » Contraction of alpine ecosystems and reduced snow depth and cover » Damage to popular environmental sites » Impacts on cultural heritage connections to sites and country | <ul style="list-style-type: none"> » Increased maintenance costs » Inability to access essential services or commute to place of employment » Loss of escape routes from natural disasters » Loss of tourism or access to recreational and holiday areas » Short term isolation of communities | <ul style="list-style-type: none"> » Increased pressure on water supply and security for irrigators » Damage to water quality and infrastructure from fire, flood, or algal blooms » Increased threat to significant wetlands » Impact on groundwater resources, particularly shallow aquifers |

Gippsland Climate Ready Fact Sheets

More on projected climate impacts for Gippsland



Climate Ready Gippsland

Adaptation action in Gippsland

We identified over 126 adaptation projects currently or recently implemented in Gippsland, but we know there are many more. The majority were focused on actions to build more sustainable and resilient communities, including conducting risk and hazard assessments, developing adaptation planning and climate proofing essential infrastructure. A significant number of projects also supported improving emergency preparedness for more extreme weather and temperature.

61



PROJECTS AIMED AT BUILDING SUSTAINABLE AND RESILIENT COMMUNITIES

- » Knowledge
- » Planning
- » Risk and Hazard Assessment
- » Climate Resilient Infrastructure
- » Coastal Inundation and Erosion

29



PROJECTS IMPROVING EMERGENCY PREPAREDNESS AND MANAGEMENT

- » Bushfire and Heatwave Preparedness
- » Coastal Inundation and Flooding
- » Community Preparedness
- » Municipal Emergency Management

28



PROJECTS WORKING ON BIODIVERSITY AND RESILIENT AGRICULTURE

- » Ecosystem Preservation & Regeneration
- » Linking Biodiversity & Primary Production
- » Drought Preparedness
- » Strengthening Resilient Agriculture Practices

3



WATER PROJECTS

- » Water Supply
- » Water Management
- » Climate Change Strategy

5



RENEWABLE ENERGY AND ENERGY EFFICIENCY PROJECTS

- » Solar
- » Transition Planning
- » Knowledge and Information

Virtual Centre for Climate Change Innovation

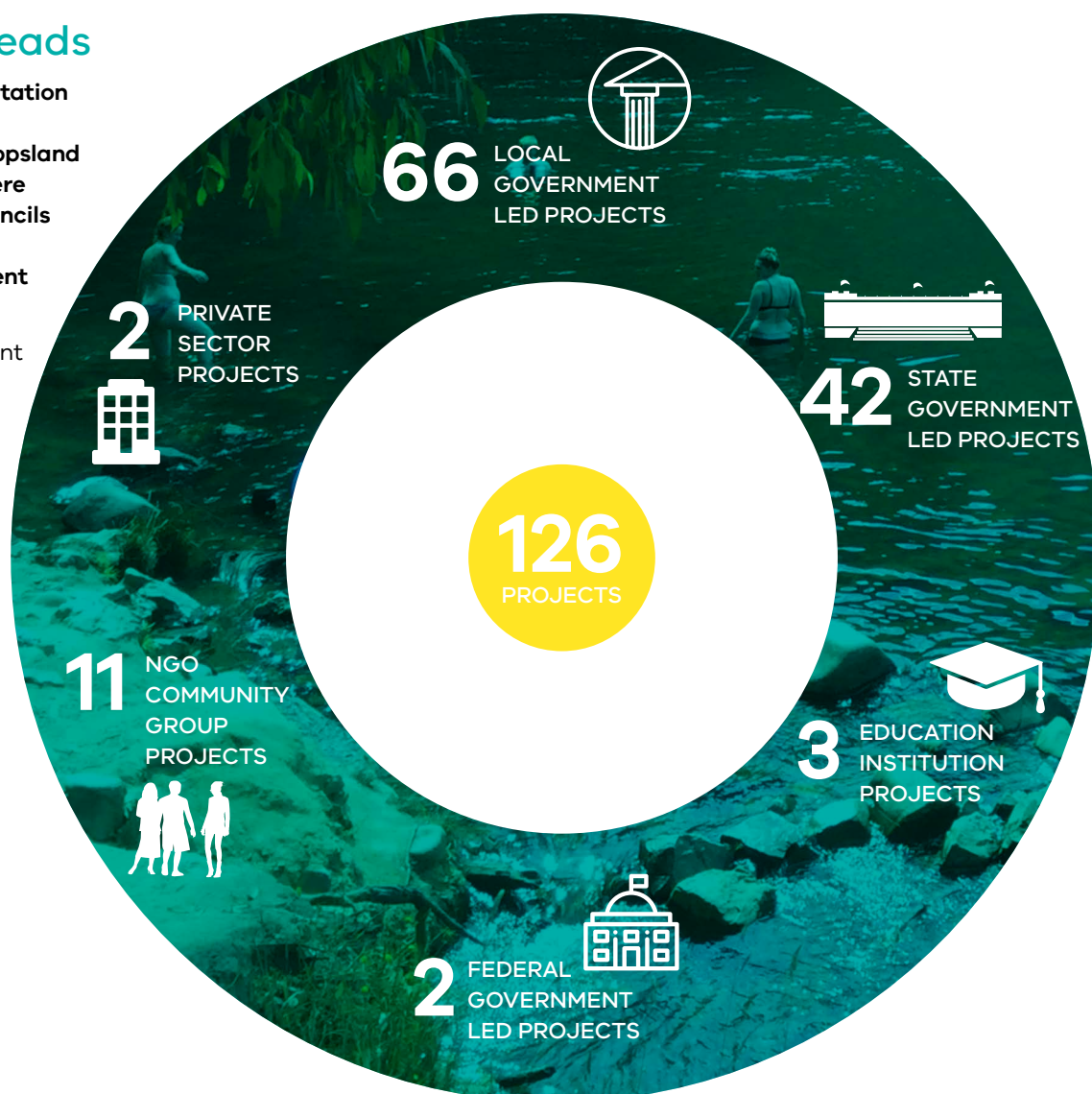
The Virtual Centre for Climate Change Innovation (VCCCI) has been established to strengthen Victoria's role as a climate change leader.



Project leads

Of the 126 adaptation action projects identified in Gippsland the majority were led by local councils and shires or state government agencies.

Non-Government Organisations, such as Gunaikurnai Land and Waters Aboriginal Corporation and Western Port Biosphere Reserve Foundation also led a number of adaptation projects across the region.



Project spotlight: Concept Design for Coastal Flooding Adaptation

A concept design for adaptation to coastal flooding at Burrabogie Island was commissioned by East Gippsland Shire. With this project the council sought to develop solutions for townships on the Gippsland Lakes, which are vulnerable to sea level rise, erosion, estuarine flooding and storm surges.

Engineers undertook flood modelling and risk assessments for a combination of natural and hard engineering solutions and developed design options for drainage and flood and erosion prevention works. They also assessed cost, functionality over time, environmental and social implications. The project has provided increased understanding and knowledge of hard and soft engineering solutions for adaptation planning.

Key gaps in Gippsland

During the consultation, people identified many projects that could help the region adapt to climate change. Taking into account the measures already under way—and focussing on regional issues, rather than state or national—here are some key gaps identified for Gippsland:

- » tangible adaptation outcomes for investment in capacity building, research and planning
- » informed leadership on climate adaptation among boards, elected representatives and senior managers, by providing targeted, industry-specific advice
- » a more strategic approach to land use planning to match land capability, climatic requirements and changing land use under a future climate, population growth and industry restructuring
- » knowledge gaps in areas such as biodiversity management and carbon offset plantings and the associated catchment, adaptation and mitigation benefits
- » opportunity for diversification of iconic and alternative tourism in the region
- » lack of awareness of the impacts of climate change on Indigenous cultural heritage and options for adaptation
- » health strategies addressing climate change impacts other than extreme heat events; for example, the impacts of changes in disease and more emergency events on community mental health

Enabling adaptation

While our consultations identified the need to better coordinate adaptation knowledge and action, we also heard about the strong track record of partnerships among organisations in Gippsland. For example, East Gippsland Shire led a three-year project across five councils, aimed at integrating climate risk into council processes. Likewise, emergency response organisations across the region have scaled up their planning and collaboration after the Black Saturday bushfires in 2009.

Opportunities

Gippslanders told us that the challenges of climate adaptation are many. It is also recognised that the region has some advantages.

Compared to the rest of the state, it is projected to remain a relatively wet and mild area. The transition away from coal-fired electricity generation is a significant change, with the potential to shrink the economy and diminish wellbeing, but it is also an opportunity to push for a highly skilled workforce for new manufacturing and renewable energy industries.

What's next?

The information gathered through the Gippsland climate change adaptation gap analysis will inform priorities for action under the *Supporting our Regions to Adapt* program over the next three years.

This program will ensure government works in partnership with regional communities. We'll collaborate to support action that reduces the risk presented by climate change and help Victorians meet the challenges and act on the opportunities of climate change.

FOR MORE INFORMATION ON WHAT IS HAPPENING IN GIPPSLAND CONTACT:

Rob Dimsey

Forest Fire and Regions
574 Main St, Bairnsdale, 3875
(03) 5152 0600
robert.dimsey@delwp.vic.gov.au

Ashley Hall

Forest Fire and Regions
71 Hotham St, Traralgon, 3844
(03) 5172 2111
ashley.hall@delwp.vic.gov.au

Climate Action in Victoria

To find out about other
Victorian Government
climate actions visit:
climatechange.vic.gov.au

© The State of Victoria Department of Environment, Land, Water and Planning 2018



This work is licensed under a Creative Commons Attribution 4.0 International licence. You are free to re-use the work under that licence, on the condition that you credit the State of Victoria as author. The licence does not apply to any images, photographs or branding, including the Victorian Coat of Arms, the Victorian Government logo and the Department of Environment, Land, Water and Planning (DELWP) logo. To view a copy of this licence, visit creativecommons.org/licenses/by/4.0/

ISBN 978-1-76077-143-0 (Print)

ISBN 978-1-76077-144-7 (pdf/online/MS word)

Disclaimer

This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication.

Accessibility

If you would like to receive this publication in an alternative format, please telephone the DELWP Customer Service Centre on 136186, email customer.service@delwp.vic.gov.au, or via the National Relay Service on 133 677 www.relayservice.com.au. This document is also available on the internet at www.delwp.vic.gov.au.